

Capstone Project Document about Data Collection and its Methods

Data Collection | Definition, Methods & Examples

Data Collection Definition: Systematic process of gathering observations or measurements.

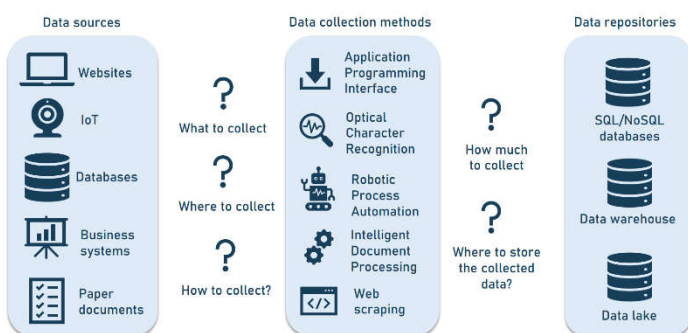
Before you begin collecting data, you need to consider:

1. The aim of the Project
2. The type of data that you will collect
3. The methods and procedures you will use to collect, store, and process the data

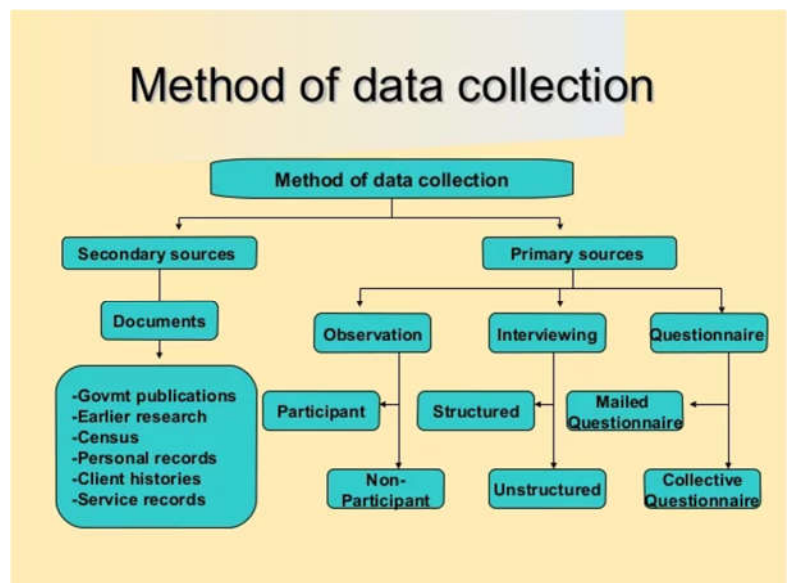
Data Collection Techniques



PILLARS OF DATA COLLECTION



Method of data collection



Primary Step: Aim of your project

- Decide what you want to do in the project (Take your time to understand about the project and Business and then aim it).
- Think about the problem statements: what is the practical or scientific issue that you want to address and why does it matter?
- Formulate one or more problem statement questions that precisely define:
 - what you want to find out. Depending on your research questions, you might need to collect quantitative or qualitative data:



What is Quantitative or Qualitative data?

- **Quantitative data** is expressed in numbers and graphs and is analysed through statistical methods.
- **Qualitative data** is expressed in words and analysed through interpretations and categorizations.

Secondary Step: Methods to Collect the data

*** As we are focusing on Primary data the data collection methods related to Primary data needs to be followed.

Data collection methods

Method	When to use	How to collect data
Experiment	To test a causal relationship.	Manipulate variables and measure their effects on others.
Survey	To understand the general characteristics or opinions of a group of people.	Distribute a list of questions to a sample online, in person or over-the-phone.
Interview/focus group	To gain an in-depth understanding of perceptions or opinions on a topic.	Verbally ask participants open-ended questions in individual interviews or focus group discussions.
Observation	To understand something in its natural setting.	Measure or survey a sample without trying to affect them.
Ethnography	To study the culture of a community or organization first-hand.	Join and participate in a community and record your observations and reflections.
Archival research	To understand current or historical events, conditions or practices.	Access manuscripts, documents or records from libraries, depositories or the internet.
Secondary data collection	To analyze data from populations that you can't access first-hand.	Find existing datasets that have already been collected, from sources such as government agencies or research organizations.

- **Experimental: Project is primarily a quantitative method.**
- **Interviews, focus groups, and ethnographies: These are qualitative methods.**
- **Surveys, observations, archival research and secondary data collection can be quantitative or qualitative methods.**

Next Step: Now it's a time to your data collection procedure

- You need to plan exactly how you will implement them.
- What procedures will you follow to make accurate observations or measurements of the variables you are interested in?

For instance, if you're conducting surveys or interviews, decide what form the questions will take; if you're conducting an experiment, make decisions about your experimental design (e.g., determine inclusion and exclusion criteria).

Last Step: Collect the data

Finally, you can implement your chosen methods to measure or observe the variables you are interested in.

Examples of collecting qualitative and quantitative data:

- To collect data about perceptions of managers, you administer a survey with closed- and open-ended questions to a sample of 300 company employees across different departments and locations.
- The closed-ended questions ask participants to rate their manager's leadership skills on scales from 1–5. The data produced is numerical and can be statistically analyzed for averages and patterns.
- The open-ended questions ask participants for examples of what the manager is doing well now and what they can do better in the future. The data produced is qualitative and can be categorized through content analysis for further insights.

To ensure that high quality data is recorded in a systematic way, here are some best practices:

Record all relevant information as and when you obtain data.

****If you collect quantitative data, you can assess the reliability and validity to get an indication of your data quality.**

*****This Document is jointly prepared by Dr. Aaditya and Dr. Ashwin**